

Exemption No. 6699

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
RENTON, WASHINGTON 98055-4056**

In the matter of the petition of

Israel Aircraft Industries

for an exemption from
14 CFR § 25.813 (a)

Regulatory Docket No. 28997

PARTIAL GRANT OF EXEMPTION

By letter dated July 28, 1997, Mr. Baruch Marom, Director, Quality Assurance and Airworthiness, Israel Aircraft Industries, P.O. Box 8, Ben Gurion Airport, 70150 Israel, petitioned for an exemption from the requirements of 14 CFR § 25.813(a), to permit an interior arrangement that does not provide the required passageway to the main entry door of the Astra SPX airplane.

Sections of the FAR affected:

Section 25.813(a) requires that an unobstructed passageway, 20" in width, be provided to each Type I emergency exit.

Related Sections of the FAR:

Section 25.783(h) requires that a passenger entry door must meet the requirements of a Type II or larger emergency exit.

Section 25.807 requires that the emergency exit complement for an airplane with 9 passengers or less consist of an exit on each side of the fuselage, meeting the requirements of a Type IV or larger emergency exit.

ANM-97-040-E

The petitioner's supportive information is as follows:

“Background: The deployed observer seat (Dettmers industries model J5000-1-TSO-C39b) installed on the Astra SPX A/C S/N 88 & 90 as per USAF C-38 program specification (MOD 6513) reduces the FAR 25.813(a) required passageway (10.5” instead of 20” required.)”

“IAI Position: This installation can be approved as an exemption on the following grounds:

- Public interest to allow interference with the passageway
- Equal level of safety provided

“Public Interest:

C-38 is a governmental project which requires an observer seat installation as a mandatory provision. The IAI proposed configuration has been accepted by the customer (USAF) as meeting his requirements.

C-38 configuration is a unique one which is not applicable for any other basic commercial Astra SPX aircraft configuration.

“Level of Safety: For the configuration, flightcrew procedure has been developed and demonstrated showing that trained crew can evacuate the A/C within 30 seconds in the worst case scenario (an incapacitated observer), using one of the two Type IV overwing emergency exits.

“This supports IAI statement that the level of safety provided by this configuration is equal to that provided by FAR 25.813(a) from the which the exemption is requested.”

Also included in the petitioner's supporting information is a technical document discussing evacuation tests that were carried out on the arrangement in question, and describing the interior arrangement of the airplane. This document addressed the evacuation of crew from the cockpit under different conditions of observer seat stowage conditions. Tests included dark of night conditions and were generally completed in 30 seconds or less. In addition, the document refers to previous evacuation demonstrations with passengers carried out on the SPX using only one Type IV exit, and notes that this capability would not be affected using the proposed arrangement.

A summary of the petitioner's request appeared in the Federal Register on August 28, 1997 (62 FR 45692). No comments were received.

The FAA's analysis/summary is as follows:

The petitioner is requesting relief from the requirement that the passageway leading to a Type I emergency exit have an unobstructed 20” width. Installation and subsequent deployment of an observer seat reduces the passageway to 10.5”. Although the observer seat provides the

required access when retracted, this is a manual operation, and no credit is allowed for such manual actions when determining the passageway width required in the regulations. The FAA notes that the minimum passageway width occurs at a relatively low height above the floor, between the passenger seat bottom cushion and the observer seat back, where it would be expected to have the least impact on egress of passengers.

In addition to addressing this issue as a non-compliance with the passageway requirements, another way to assess it is to consider the requirements for exit complement. Section 25.807 requires that an airplane with 9 passengers or less have only one Type IV exit on each side of the fuselage. The Astra SPX has one Type IV exit over each wing. However, § 25.783 also requires that each entry door qualify as a Type II or larger exit. So, in effect, the requirements for an airplane with 9 passengers or less are one Type II exit on one side of the fuselage and one Type IV exit on the other. Since Type II and larger exits are required to have specified passageways, the observer seat installation on the C-38 effectively “de-rates” the entry door (the entry door becomes an oversized Type III exit), and therefore does not comply with § 25.783, since a Type III exit is not equivalent to a Type II exit.

Viewed from this perspective, the airplane could be said to have three fully qualified exits (where only two are required), with the entry door meeting the requirements for a Type III exit, rather than one of the larger types. While the FAA believes that entry doors generally should qualify as one of the larger types of exits, the military use of the airplane may make this less significant. Passengers on these airplanes will not be the typical flying public, and can be instructed to a higher level of proficiency regarding the emergency evacuation procedures for the airplane. In addition, the installation is limited to two airplanes and so cannot be said to represent a trend or prevalence in design.

The petitioner has conducted evacuation testing showing that the observer seat does not constitute a significant impediment to trained crew. In addition, it is considered that the observer seat will only be deployed for takeoff and landing where the mission dictates its use, and would otherwise be stowed. Since the airplane is being configured for the use of the US military, and since personnel on board the airplane will be permitted at the discretion of the military, the FAA considers that some compromise to the specific exit access provisions is warranted. In making this determination, the FAA notes that the airplane is equipped with sufficient numbers of exits to provide for rapid evacuation of all occupants on the airplane, and that the entry door is accessible, even with the observer seat deployed. The fact that there are additional exits on the airplane does not mean that one exit may not perform its intended function. However, the FAA finds that the entry door is still a viable means of egress for the number of occupants on board.

In consideration of the foregoing, I find that a grant of exemption is in the public interest, and will not significantly affect the overall level of safety provided by the regulations. Therefore, pursuant to the authority contained in 49 US 40113 and 44701, formerly §§ 313(a) and 601(c) of the Federal Aviation

Act of 1958 as amended, delegated to me by the Administrator (14 CFR 11.53), the petition of Israel Aircraft Industries for an exemption from the exit passageway requirements of 14 CFR § 25.813(a), to allow the installation of Dettmers Industries Observer Seat model J5000-1-TSO-C39b on the Astra SPX airplane, is granted, with the following provision:

This exemption is limited to airplanes S/N 88 & 90, and to operations conducted by or on behalf of a United States military service.

Issued in Renton, Washington, on

Stewart R. Miller
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service, ANM-100